

ABSTRACT

A system (100) for transporting electric energy in superconductivity conditions is described, which comprises

- a superconducting cable (13) including superconducting material, and

- a cryogenic plant (1) for cooling said superconducting cable (13) below the critical temperature of said material, comprising:

a) a circuit (2) for circulating a first refrigerating fluid having a first predetermined temperature lower than the critical temperature of the superconducting material, from and to the superconducting cable (13),

b) a refrigerating circuit (3) for cooling a second refrigerating fluid to a second predetermined temperature lower than the temperature of the first refrigerating fluid,

c) a heat exchange unit (31) for effecting a heat exchange between said first and second refrigerating fluids,

which is characterized in that said heat exchange unit (31) is provided with a storage unit (4) of a third refrigerating fluid having a third predetermined temperature lower than the temperature of the first refrigerating fluid and being in heat exchange relationship with said first and second fluids.